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EXAMINER	
NGUYEN, TOAN D	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

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Office Action Summary	Application No. 10/086,576	Applicant(s) ABROL ET AL.	
	Examiner Toan D. Nguyen	Art Unit 2616	

-- *The MAILING DATE of this communication appears on the cover sheet with the correspondence address* --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *10 October 2007*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *5-7,15,17-20,26,33,36 and 38* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *5-7,15,17-20,26,33,36 and 38* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *28 February 2002* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)

2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.

4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .

5) ☐ Notice of Informal Patent Application (PTO-152)

6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

3. Claims 5, 26 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shacher et al. (US 5,671,223) in view of Hwang (Us 6,788,652) further in view of Aggarwal et al. (US 6,249,525).

For claim 5, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1), the detection unit is operative to detect for flag bytes in the received data (col. 11, line 67 to col. 12, line 1); and

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data. To include conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose one or more Radio Link Protocol (RLP) packets, conversion unit being operative to remove flag and escape bytes in the received data, and the detection unit is operative to detect for escape bytes in the received data. In an analogous art, Hwang discloses one or more Radio Link Protocol (RLP) packets (col. 6, lines 47-49).

One skilled in the art would have recognized the one or more Radio Link Protocol (RLP) packets, and would have applied Hwang's RLC in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Hwang's radio protocol for mobile communication system and method in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the RLC-ACK entity 130 (col. 6, line 47).

Furthermore, Shacher et al. in view of Hwang do not expressly disclose the conversion unit being operative to remove flag and escape bytes in the received data, and the detection unit is operative to detect for escape bytes in the received data. In an analogous art, Aggarwal et al. disclose remove flag and escape bytes in the received data (col. 13 line 66 to col. 14 line 14), and the detection unit is operative to detect for escape bytes in the received data (col. 1, lines 43-44).

One skilled in the art would have recognized the remove flag and escape bytes in the received data, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

For claim 26, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1); and

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to frame the received data based on the first set of control signals to provide framed data. To include conversion unit operative to frame the received data based on the first set of control signals to provide framed data would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose one or more Radio Link Protocol (RLP) packets, the conversion unit is operative to insert an escape bytes upon detection of a data byte having one of the specific values. In an analogous art, Hwang discloses one or more Radio Link Protocol (RLP) packets (col. 6, lines 47-49).

One skilled in the art would have recognized the one or more Radio Link Protocol (RLP) packets, and would have applied Hwang's RLC in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Hwang's radio protocol for mobile communication system and method in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the RLC-ACK entity 130 (col. 6, line 47).

Furthermore, Shacher et al. in view of Hwang do not expressly disclose the conversion unit is operative to insert an escape byte upon detection of a data byte having one of the specific values. In an analogous art, Aggarwal et al. disclose the conversion unit is operative to insert an escape byte upon detection of a data byte having one of the specific values (col. 13, lines 66-67).

One skilled in the art would have recognized the conversion unit is operative to insert an escape byte upon detection of a data byte having one of the specific values, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

For claim 33, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed in one or more packets (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1); and

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to frame the received data based on the first set of control signals to provide framed data. To include conversion unit operative to frame the received data based on the first set of control signals to provide framed data would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12, lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose one or more Radio Link Protocol (RLP) packets, wherein the framer is in one of a plurality of operating states at any given moment, and wherein the operating states include an idle state indicative of no framing being performed and a process state indicative of framing being performed,

the operating states further include an escape state indicative of processing for an escape byte. In an analogous art, Hwang discloses one or more Radio Link Protocol (RLP) packets (col. 6, lines 47-49).

One skilled in the art would have recognized the one or more Radio Link Protocol (RLP) packets, and would have applied Hwang's RLC in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Hwang's radio protocol for mobile communication system and method in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the RLC-ACK entity 130 (col. 6, line 47).

Furthermore, Shacher et al. in view of Hwang do not expressly disclose wherein the framer is in one of a plurality of operating states at any given moment, and wherein the operating states include an idle state indicative of no framing being performed and a process state indicative of framing being performed, the operating states further include an escape state indicative of processing for an escape byte. In an analogous art, Aggarwal et al. disclose wherein the framer is in one of a plurality of operating states at any given moment, and wherein the operating states include an idle state indicative of no framing being performed and a process state indicative of framing being performed, the operating states further include an escape state indicative of processing for an escape byte (col. 13, lines 66-67).

One skilled in the art would have recognized the wherein the framer is in one of a plurality of operating states at any given moment, and wherein the operating states include an idle state indicative of no framing being performed and a process state

indicative of framing being performed, the operating states further include an escape state indicative of processing for an escape byte, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

4. Claims 6 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shacher et al. (US 5,671,223) in view of Aggarwal et al. (US 6,249,525).

For claim 6, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1) and operative to detect for flag bytes in the received data (col. 11, line 67 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data. To include conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330… Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose operative to detect for and remove escape bytes in the received data, and operative to un-escape a data byte following each detected escape byte in the received data. In an analogous art, Aggarwal et al. disclose operative to detect for and remove escape bytes in the received data, and operative to un-escape a data byte following each detected escape byte in the received data (col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the operative to detect for and remove escape bytes in the received data, and operative to un-escape a data byte following each detected escape byte in the received data, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape

characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

5. Claims 7, 17-20, 36 and 38 are rejected under 35 U.S.C. 103(a) as being unpatentable over Shacher et al. (US 5,671,223) in view of Aggarwal et al. (US 6,249,525) further in view of W. Simpson, RFC 1662.

For claim 7, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1) and operative to detect for flag bytes in the received data (col. 11, line 67 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data. To include conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data would have been obvious to one of ordinary

skill in the art because Shacher et al. clearly teach at col. 12, lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose operative to detect for escape bytes in the received data; and further operative to provide a header word for each detected flag byte in the received data. In an analogous art, Aggarwal et al. disclose operative to detect for escape bytes in the received data; and further operative to provide a word for each detected flag byte in the received data (col. 1, lines 43-44, and col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the operative to detect for and remove flag and escape bytes in the received data, and operative to un-escape a data byte following each detected escape byte in the received data, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose operative to provide a header word for each detected flag byte in the received data. In an analogous art, W. Simpson disclose operative to provide a header word for each detected flag byte in the received data (section 3.1 Frame Format).

One skilled in the art would have recognized the operative to provide a header word for each detected flag byte in the received data, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 17, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific value (col. 11, line 65 to col. 12, line 1).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data. To include conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12, lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose wherein the operating states include an idle state indicative of no deframing being performed and a process state indicative of deframing being performed, and wherein the operating states further include an escape state indicative of processing for an escape byte and a header state indicative of generation of a header for the deframed data. In an analogous art, Aggarwal et al. disclose wherein the operating states include an idle state indicative of no deframing being performed and a process state indicative of deframing being performed, and wherein the operating states further include an escape state indicative of processing for an escape byte (col. 1, lines 43-44, and col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the wherein the operating states include an idle state indicative of no deframing being performed and a process state

indicative of deframing being performed, and wherein the operating states further include an escape state indicative of processing for an escape byte, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose a header state indicative of generation of a header for the deframed data. In an analogous art, W. Simpson discloses a header state indicative of generation of a header for the deframed data (section 3.1 Frame Format).

One skilled in the art would have recognized the header state indicative of generation of a header for the deframed data, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 18, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive an RLP packet of data to be deframed, one word at a time, and for each received word provide one data byte at a time for subsequent processing (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit (col. 11, line 65 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to process each data byte from the interface unit. To include conversion unit operative to deframe the received data based on the first set of control signals to process each data byte from the interface unit would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a header word for each flag byte, and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet; and an output interface unit operative to

provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662. In an analogous art, Aggarwal et al. disclose removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a word for each flag byte (col. 1, lines 43-44, and col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a word for each flag byte, and wherein the operating states further include an escape state indicative of processing for an escape byte, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose providing a header word for each flag byte, and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet; and an output interface unit operative to provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662. In an analogous art, W. Simpson discloses providing a header word for each flag byte

(page 4, section 3.1 Frame Format), and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet (page 5, section 3.1 Frame Format); and an output interface unit operative to provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662 (See W. Simpson, RFC: 1662).

One skilled in the art would have recognized the providing a header word for each flag byte, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 19, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive an RLP packet of data to be deframed, one word at a time, and for each received word provide one data byte at a time for subsequent processing (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit (col. 11, line 65 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to process each data byte from the interface unit. To include conversion unit operative to deframe the received data based on the first set of control signals to process each data byte from the interface unit would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a header word for each flag byte, and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet; and an output interface unit operative to provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662. In an analogous art, Aggarwal et al. disclose removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a word for each flag byte (col. 1, lines 43-44, and col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the removing flag and escape bytes, un-escaping a data byte following each escape byte, providing a word for each flag byte, and wherein the operating states further include an escape state indicative of

processing for an escape byte, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose providing a header word for each flag byte, and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet; and an output interface unit operative to provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662. In an analogous art, W. Simpson discloses providing a header word for each flag byte (page 4, section 3.1 Frame Format), and checking each deframed packet based on a flame check sequence (FCS) value associated with the packet (page 5, section 3.1 Frame Format); and an output interface unit operative to provide deframed data; and wherein the RLP packet includes one or more complete or partial PPP packets having a format defined by RFC1662 (See W. Simpson, RFC: 1662).

One skilled in the art would have recognized the providing a header word for each flag byte, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the

time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 20, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

receiving the RLP packet, one word at a time; evaluating each byte of each received word (col. 7, lines 10-11);

providing status signals indicative of each detected flag byte (col. 11 line 65 to col. 12, line 1).

However, Shacher et al. do not expressly disclose removing the flag and escape bytes based on the status signals;un-escaping a data byte following each detected escape byte; checking each PPP packet based on an FCS value associated with the packet; and providing deframed data. In an analogous art, Aggarwal et al. disclose removing the flag and escape bytes based on the status signals; un-escaping a data byte following each detected escape byte (col. 1, lines 43-44, and col. 13, line 66 to col. 14, line 14).

One skilled in the art would have recognized the removing the flag and escape bytes based on the status signals;un-escaping a data byte following each detected escape byte, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams

therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose checking each PPP packet based on an FCS value associated with the packet; and providing deframed data. In an analogous art, W. Simpson discloses checking each PPP packet based on an FCS value associated with the packet; and providing deframed data (page 5, section 3.1 Frame Format).

One skilled in the art would have recognized the checking each PPP packet based on an FCS value associated with the packet; and providing deframed data, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 36, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed in one or more packets, one word at a time, and for each received word provide one data byte at a time for subsequent processing (col. 7 lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals and to process each data byte from the interface unit. To include conversion unit operative to deframe the received data based on the first set of control signals and to process each data byte from the interface unit would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12, lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330… Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose inserting an escape byte for each data byte to be escaped and escaping the data byte, inserting flag byte in response to receiving a first command, and inserting an FCS value in response to receiving a second command; and an output interface unit operative to provide framed data having a format defined by RFC 1662. In an analogous art, Aggarwal et al. disclose inserting an escape byte for each data byte to be escaped and escaping the

data byte, inserting flag byte in response to receiving a first command (col. 13, lines 66-67).

One skilled in the art would have recognized the escape byte for each data byte to be escaped and escaping the data byte, inserting flag byte in response to receiving a first command, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose inserting an FCS value in response to receiving a second command; and an output interface unit operative to provide framed data having a format defined by RFC 1662. In an analogous art, W. Simpson discloses inserting an FCS value in response to receiving a second command; and an output interface unit operative to provide framed data having a format defined by RFC 1662 (page 5, section 3.1 Frame Format).

One skilled in the art would have recognized the inserting an FCS value in response to receiving a second command; and an output interface unit operative to provide framed data having a format defined by RFC 1662, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W.

Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

For claim 38, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

receiving the packet, one word at a time; evaluating each byte of each received word to detect for bytes (col. 7, lines 10-11);

providing status signals indicative of each data byte (col. 11, line 65 to col. 12, line 1).

However, Shacher et al. do not expressly disclose inserting escape bytes for each data byte to be escaped and escaping the data byte; inserting a flag byte in respeonse to receiving a flag insert command; inserting an FCS value in response to receiving an FCS insert command; and providing framed data having the format defined by RFC 1662. In an analogous art, Aggarwal et al. disclose inserting escape bytes for each data byte to be escaped and escaping the data byte; inserting a flag byte in respeonse to receiving a flag insert command (col. 13 line 66 to col. 14 line 14).

One skilled in the art would have recognized the inserting escape bytes for each data byte to be escaped and escaping the data byte; inserting a flag byte in respeonse to receiving a flag insert command, and would have applied Aggarwal et al.'s HDLC operation in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use Aggarwal et al.'s method of and apparatus for inserting and/or deleting escape characters into and from data

packets and datagrams therefor on high speed data stream networking lines in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being compared with either 7d or 7e or some programmed ACCM characters (col. 14, lines 7-9).

Furthermore, Shacher et al. in view of Aggarwal et al. do not expressly disclose inserting an FCS value in response to receiving an FCS insert command; and providing framed data having the format defined by RFC 1662. In an analogous art, W. Simpson discloses inserting an FCS value in response to receiving an FCS insert command; and providing framed data having the format defined by RFC 1662 (page 5, section 3.1 Frame Format).

One skilled in the art would have recognized the inserting an FCS value in response to receiving an FCS insert command; and providing framed data having the format defined by RFC 1662, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

6. Claim 15 is rejected under 35 U.S.C. 103(a) as being unpatentable over Shacher et al. (US 5,671,223) in view of W. Simpson, RFC 1662.

For claim 15, Shacher et al. disclose multichannel HDLC framing/deframing machine, comprising:

an input interface unit (figure 4, reference 120) operative to receive data to be deframed (col. 7, lines 10-11);

a detection unit (figure 9, reference 308) operative to evaluate each data byte from the input interface unit to detect for bytes of specific values (col. 11, line 65 to col. 12, line 1);

a state control unit (figure 9, reference 312) operative to provide a first set of control signals indicative of specific tasks to be performed for deframing based in part on the detected bytes of specific values (col. 12, lines 27-57).

Shacher et al. do not expressly disclose a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data, and operative to deframe a block of data for each deframing operation. To include a conversion unit operative to deframe the received data based on the first set of control signals to provide deframed data, and operative to deframe a block of data for each deframing operation would have been obvious to one of ordinary skill in the art because Shacher et al. clearly teach at col. 12 lines 40-49 (see FIG.10), "The Rx Main Transfer Control circuit 312 determines whether or not the bits shifted out of the PRE register 310 are shifted into the DATA register 330... Determination whether the machine is Inframe is according to the state diagram in FIG.10. Zero deletion is triggered when Inframe and five ones are detected (FONES) by the PST detection circuit 322."

However, Shacher et al. do not expressly disclose operative to provide a first header for a start of the data bloc. In an analogous art, W. Simpson disclose operative to provide a first header for a start of the data bloc (section 3.1 Frame Format).

One skilled in the art would have recognized the operative to provide a first header for a start of the data bloc, and would have applied W.Simpson's frame format in Shacher et al.'s deframed. Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention, to use W. Simpson's PPP in HDLC-like Framing in Shacher et al.'s multichannel HDLC framing/deframing machine with the motivation being to provide the PPP HDLC-like frame structure (section 3.1 Frame Format).

Response to Arguments

7. Applicant's arguments filed 10/10/07 have been fully considered but they are not persuasive.

The applicant argues with respect to claim 5 on page 11, third paragraph, that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape characters in need of being removed. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed.

Cir.1992). In this case, the motivation to combine Aggrawal's teaching of HDLC operation in Shacher would be to remove flag and escape bytes in the received data.

The applicant argues with respect to claim 26 on page 13, second paragraph that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape characters in need of being removed. The examiner refers to the same response above with respect to claim 5 above.

The applicant argues with respect to claim 33 on page 15, first paragraph that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape characters in need of being removed. The examiner refers to the same response above with respect to claim 5 above.

The applicant argues with respect to claim 6 on page 18, second paragraph that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape

characters in need of being removed. The examiner refers to the same response above with respect to claim 5 above.

The applicant argues with respect to claims 7, 17, 18, 19, 36 on page 20, third paragraph that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape characters in need of being removed. The examiner refers to the same response above with respect to claim 5 above.

The applicant argues with respect to claims 20, 38 on page 22, second paragraph that there would be no reason or motivation to combine any redundant teachings of Aggrawal to provide a functionality that would be extraneous and redundant since flag and escape bytes were previously removed in Shacher's transfer control unit 312 and the "received data" at the "conversion unit" would contain no such flag or escape characters in need of being removed. The examiner refers to the same response above with respect to claim 5 above.

The applicant argues with respect to claim 15 on page 24, first paragraph that the Office Action has conceded that Shacher does not teach or suggest "a conversion unit operative to deframe the received data" as claimed by Applicants and has repeatedly attempted to introduce Aggarwal to supplement the lack of such teaching, and the present rejection solely upon Shacher in view of W. Simpson. The examiner disagrees. In response, the examiner refers to the Office Action on page 27 that

Shacher does not expressly disclose the conversion unit operative to deframe the received data based on the first set of control signals to provide deframe data, and operative to deframe a block of data for each deframing operation. To include this limitation, Shacher disclose the Rx main Transfer Control Circuit 312 at col. 12, lines 40-49 (see figure 10). The Aggarwal reference is not introduced into Shacher because claim 15 does not contain the limitation “remove flag and escape bytes in the received data”.

Conclusion

8. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

9. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Toan D. Nguyen whose telephone number is 571-272-3153. The examiner can normally be reached on M-F (7:00AM-4:30PM).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mr. Huy Vu can be reached on 571-272-3155. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Daniel Ryman

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